

Remarks:

Claims 1, 3, 7-12 and 15-34, and 38-41 are pending. Claims 35-37 are canceled in this Response.

Claims 1, 3, 7, 8, 12, 15, 18-20, 27, 28, 30, 31, and 35-41 are rejected under Section 103 as being obvious over Koizumi 2003/0025773 in view of Klaus 5631681. Claims 9-11, 16, 17, 21-26, 29, and 32-34 are rejected under Section 103 as being obvious over the combination of Koizumi and Klaus in view of Barinaga 5721576 (Claims 9-11, 26, 29, and 32-34) or Childers 61167723 (Claims 16, 17, and 21-25).

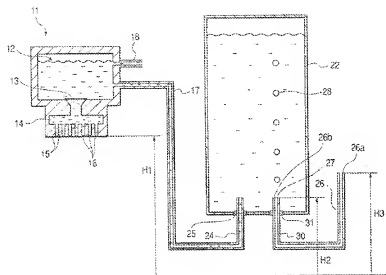
The claims have been amended to change "leading edge" to "leading surface" to clarify the claimed subject matter, consistent with the characterization of this aspect of the embodiments of the container described in the Detailed Description. See, for example, page 10, lines 9-11 and 19-23.

Interfaces Recessed Into A Planer Leading Surface (Independent Claim 1)

Claim 1, as amended, recites a printing-fluid reservoir having a substantially planer leading surface and fluid and air interfaces recessed into the leading surface and extending into the reservoir. (Support for interfaces recessed into the leading surface and extending into the reservoir may be seen, for example, in the structural configuration of interfaces 156 and 158 in Figs. 5 and 14.) As detailed below, Koizumi does not show or describe a planer leading surface generally, and specifically not interfaces recessed into a planer leading surface.

The structural embodiments of Koizumi's "ink discharge recording apparatus" are shown only schematically. There are no actual structures shown in Koizumi -- Figs. 1-4 and 8 each "schematically shows" the structure. See Koizumi Detailed Description Of The Preferred Embodiments and Fig. 1 below.

FIG. 1



Thus, there is really no part of ink tank 22 in Koizumi that can reasonably be considered a planar leading surface. The fact is that we just don't know from the schematic views in Koizumi if any of the surfaces of ink tank 22 are planar and/or if they are a leading surface for installation into an ink supply station, for example. Nevertheless, even if it is assumed that the bottom surface of ink tank 22 at "pipe type needle portions" 24 and 30 in the schematic views is assumed to be a planar leading surface, these pipe type needle portions 24 and 30 are not recessed into this surface nor are the openings in the surface through which they pass. Koizumi, therefore, does not disclose fluid and air interfaces recessed into the leading surface as recited in amended Claim 1.

The other references (Klaus, Barinaga, and Childers) also do not teach fluid and air interfaces recessed into the leading surface and extending into the reservoir, as recited in amended Claim 1.

For these reasons, Claim 1 and its dependent claims distinguish patentably over the combination of Koizumi and Klaus.

Interfaces Recessed Into A Leading Surface (Independent Claim 12)

Claim 12 has also been amended to recite that the fluid and air interfaces are recessed into the leading surface and extend into the reservoir. As detailed above for

amended Claim 1, none of the cited references disclose fluid and air interfaces recessed into the leading surface as recited in amended Claim 12.

Amended Claim 12 and its dependent claims, therefore, also distinguish patentably over the combination of Koizumi and Klaus.

Interfaces Vertically Aligned And Laterally Installed (Independent Claim 33)

Claim 33 recites fluid and air interfaces vertically aligned on an upright planar surface -- the upright planar surface is a structural feature of the off-axis printing-fluid reservoir.

The Examiner seems to assert at pages 8-9 of the pending Action that Koizumi teaches these elements of Claim 33, as follows.

Koizumi et al. discloses the following claim limitations:

As per claim 33: an off-axis printing fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein (figure 1, element 22); an upright leading edge of the printing fluid reservoir wherein the printing fluid interface is configured to output printing fluid from the printing fluid reservoir during a first mode and a printing fluid interface on the leading edge of the printing fluid reservoir wherein the air interface is configured to regulate pressure within the printing fluid reservoir by inputting air into the printing fluid reservoir during a first mode; and wherein the container is laterally installed into a printing system (figure 1, element 17 is laterally installed into the printhead) and the first fluid container engages the printing fluid interface and a second fluid container engages the air interface (figure 1, element 29).

As per claim 34: a single structural piece forms the upright leading edge of the printing fluid reservoir (figure 1, element 22).

As noted above for Claim 1, the structural embodiments of Koizumi's "ink discharge recording apparatus" are shown schematically. The actual structures are nowhere depicted in Koizumi. Thus, there is really no part of ink tank 22 in Koizumi that can reasonably be considered an upright planar surface or interfaces vertically aligned on an upright planar surface. The fact is that we just don't know from the schematic views in Koizumi if any of the surfaces of ink tank 22 are upright, planar and/or the alignment of any of the fluid interconnections.

Nevertheless, even if it is assumed that the bottom surface of ink tank 22 at "pipe type needle portions" 24 and 30 in the schematic views is assumed to be a planar leading surface, it is not an upright planer surface and pipe type needle portions 24 and 30 are not aligned vertically. (Note that the upright planer surface in Claim 33 is a feature of the off-axis printing-fluid reservoir. Thus, supply tube 17 and ink suction tube 18 on recording head 11 are irrelevant to the upright planer surface and interfaces recited in Claim 33.)

Also, supply tube 17 shown schematically entering recording head 11 from the side (rather than from the top or bottom) cannot reasonably be deemed a suggestion, much less a teaching, that ink tank 22 is laterally installed in a printing system. Koizumi does not disclose that ink tank 22 is installed in anything, specifically not laterally in a printing system -- Koizumi discloses only that an ink tank 22 is connected to a recording head 11.

If the Examiner disagrees, then she is respectfully requested to specifically point out and explain those passages in Koizumi that teach or even suggest fluid and air interfaces vertically aligned on the upright planer surface of an off-axis printing-fluid reservoir and/or a laterally installed ink container. Absent such a showing, the rejection of Claim 33 should be withdrawn.

Allowing Air To Exit When Returning Ink To The Reservoir (Independent Claim 38)

Claim 38 recites allowing printing fluid to return to the reservoir through the printing-fluid interface and allowing air to exit the reservoir through the air-interface as the printing fluid is returned to the reservoir through the printing-fluid interface. The Examiner acknowledges that Koizumi does not teach a "second mode in which air exits the print fluid container and a fluid enters the printing fluid container...." Office Action page 9. The Examiner relies on Klaus to supply this teaching missing from Koizumi.

Klaus teaches venting the ink container while the container is refilled with ink:

The top side 51 of cartridge 20 ... includes an air vent opening 52 and an ink refill port 54, both of which are openings which extend through the top wall of container enclosure 44. Vent 52 allows air to enter and exit reservoir 50 as ink is added or drained from the cartridge. ... The refill port

allows ink to flow into reservoir 50 from a refill coupling described in detail below. Klaus column 4, lines 41-49.

Klaus does not teach or suggest a print-fluid interface through which printing fluid is "returned" to the reservoir.

Note that Claim 38 recites:

allowing printing fluid to exit the reservoir through the printing-fluid interface;

allowing printing fluid to return to the reservoir through the printing-fluid interface;

and

allowing air to exit the reservoir through the air-interface as the printing fluid is **returned** to the reservoir through the printing-fluid interface.

It is this combination of acts that distinguishes over Koizumi and Klaus. Klaus may teach allowing air to enter a reservoir while the reservoir is being filled with ink from outside the printer, but it does teach or even contemplate recirculating ink to and from the reservoir. Hence, combining Koizumi and Klaus does not, indeed cannot, teach all of the limitations of Claim 38.

Claim 38 and its dependent claims distinguish patentably over the cited references.

The foregoing is believed to be a complete response to the pending Action.

Respectfully submitted,
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